Table 4

Morphometric Statistics for *E. complanata* taken from Lake Pocotopaug (including Site H)

Statistic	Parameter			
	Length (mm)	Width (mm)	Thickness (mm)	Biomass (g)
n	167	164	163	40
σ	8.885	4.156	3.148	0.22751
$\bar{x} \pm$ 95% c.l.	73.91 ± 1.36	32.38 ± 0.64	18.72 ± 0.48	1.03968 ± 0.070
Range	48.0-100.8	21.2-46.8	10.4-26.1	0.1764-2.19

Table 5

Length Class Frequency of *E. complanata* sampled from Lake Pocotopaug (including Site H)

Length Class (mm)	Frequency	% Total Individuals
40-49	2	1.212
50-59	10	6.061
60-69	36	21.818
70-79	78	47.273
80-89	35	20.000
90-99	5	3.030
100-109	1	0.606

wading humans, and possibly predation pressure from locally abundant waterfowl and terrestrial animals such as raccoons (Reid, 1961). At depths greater than 4 m, the presence of soft substrata is probably one important factor excluding this species.

Cvancara (1972) finds that depth significantly affects the morphometry of the freshwater mussels *Lampsilis radiata luteola* and *Anodontoides ferussacianus* in Long Lake, Minnesota. In addition, Cvancara (*op. cit.*) and Moyle & Bacon (1969) find that the population density of these freshwater mussels is inversely related to vegetative cover. These workers believe that the mussels are unable to compete for space with aquatic vegetation. These factors apparently do not affect the distribution, population density or morphometry of *Elliptio complanata* in Lake Pocotopaug.

Population density and biomass values (calculated from mean ±95% confidence limits for morphometric variables using the regression model) for *Elliptio complanata* are compared with data presented by Deevey (1941) for macrobenthos (excluding large mussels) in Lake Pocotopaug and similar lakes in the Connecticut Eastern Highlands (Table 6). These data show that *E. complanata*, while constituting only a small fraction of overall macroinvertebrate abundance, is a very large contributor to the macrobenthic biomass of Lake Pocotopaug.

The absence of small individuals (< 48 mm) of *Elliptio complanata* in Lake Pocotopaug is problematic. This phenomenon has been observed for this and other freshwater mussels in a number of surveys (*e. g.*, Matteson, 1948a). Matteson (*op. cit.*) found that reduced summer water temperatures inhibit glochidial (*i. e.* larval) development, and that furthermore, environmental perturbations such as increased temperature and decreased dissolved oxygen concentrations result in death of newly settled young and gravid females. Also he notes these fluctuations may induce the abortion, through premature expulsion, of maturing glochidia from gravid females' gill marsupia. As a result of this sensitivity to environmental variations, it is possible that *E. complanata* populations frequently may experience reproductive failures and high juvenile mortality. The long life span (> 12 years [Matteson, *op. cit.*]) and large reproductive potential ($4 - 7 \times 10^5$ glochidia/gravid female [Matteson, 1948a; 1955]) are possible adaptive strategies evolved to

Table 6

Comparison of Population Density and Biomass of *Elliptio complanata* in Lake Pocotopaug with that of Associated Macrobenthos from Lake Pocotopaug and similar Eastern Connecticut Highlands Lakes

Parameter	Lake Pocotopaug *E. complanata*	Macrobenthos (excluding large mussels) from Lake Pocotopaug and similar Eastern Connecticut Highlands Lakes[2]
No. Indiv/m²	32-60	$2.32\text{-}16.2 \times 10^3$
Biomass (g/m²)	33.74-70.44	1.54-9.01

[2]Data from Deevey (1941).